7 Discussion

Medicines are a part of most people's lives. Their use increases with age, and most older people take more than one medicine. Medicines can save lives, help people stay healthy, cure some diseases and improve quality of life. But they can also have associated side effects and problems relating to over-use, under-use, misuse or adverse events.

Cardiovascular disease affects nearly one in five Australians and about 65% report using medicines for their cardiovascular condition(s), amounting to 2.3 million people. Government expenditure on medicines commonly used to prevent or treat cardiovascular disease amounted to $2 billion in 2005, representing 35% of the total spent on all subsidised medicines. It is in everybody's interest that cardiovascular medicines are used safely, responsibly and effectively.

This report documents important changes over the past decade in the supply of medicines that may be used to prevent and treat cardiovascular disease. In particular, there have been increases in supply of some blood-pressure-lowering medicines (agents acting on the renin–angiotensin system, calcium-channel blockers and beta-blockers), some serum-lipid-reducing agents (statins and 'other cholesterol and triglyceride reducers'), antithrombotic agents and antiarrhythmic medicines.

Similarly, between 2000–01 and 2005–06 there were significant changes in how GPs used medicines to manage people with cardiovascular conditions and risk factors. Specifically, we observed increased rates of prescription or supply of: agents acting on the renin–angiotensin system in managing hypertension and diabetes, serum-lipid-reducing agents in managing ischaemic heart disease and diabetes, antithrombotic agents in managing ischaemic heart disease, and beta-blocking agents in managing heart failure.

We found a higher rate of supply of some cholesterol-lowering agents (statins) and some clot-preventing medicines to newly prescribed people in the most socioeconomically disadvantaged group compared with the least disadvantaged group. This is consistent with the observed higher prevalence of cardiovascular disease and cardiovascular deaths in the most disadvantaged group compared with the least disadvantaged (AIHW 2006a). However, we do not know if the increased medicines supply to the most disadvantaged group meets their increased need.

The report also describes national initiatives to improve clinical practice relating to cardiovascular disease and promote quality use of medicines. Results to date show encouraging improvements in the management of people with hypertension or coronary heart disease—more patients achieving control of their blood pressure, using blood-pressure-lowering medicines suited to their coexisting health conditions, receiving early clot-busting treatment if having a heart attack, taking aspirin and a cholesterol-lowering agent if they have coronary heart disease, and taking beta-blocking agents if they have had a heart attack.

Together, these results suggest that doctors are increasingly following best practice guidelines for the management of cardiovascular conditions and that national interventions to this effect may indeed be starting to have a positive impact. However, it is worth noting that in some cases these improvements were small. On the other hand, we must also keep in mind that although most people with cardiovascular disease are older people, and therefore at higher risk of cardiovascular disease, with potentially more to gain with appropriate treatment, their doctors might deliberately undertreat them for fear of causing drug-adverse

events in patients using multiple medicines, due to the lack of good evidence on the effectiveness of medicines in older people with multiple chronic medical conditions, or in answer to patients' preferences (Gurwitz 2004, McLean & Le Couteur 2004, Tinetti et al. 2004).

Our analyses show a high level of discontinuation of medicines that are generally intended to be taken long term. This represents a significant waste of resources and a lost opportunity to prevent cardiovascular disease, or delay its progression and complications, with medicines known to be effective. We do not know for sure why so many people stop taking their medicines. Although most of the cost of medicines in our study was covered by government subsidies, suggesting that cost might not be a major factor, Schoen et al.'s work indicate that one in five sicker Australians omit a medicine owing to cost. Side effects of medicines may have led to their discontinuation, particularly in people using multiple medicines—nearly 28,500 hospitalisations were associated with adverse events of cardiovascular medicines and even in cases which did not require care in hospital, side effects can be annoying enough to affect persistence with medicines. Remoteness does not appear to have played a big part because any observed regional differences in persistence with medicines were small. Factors such as treating conditions with no symptoms, patients' lack of understanding of their condition or the benefits of treatment, and complexity of treatment are likely to have played a role. Previous research has shown deficiencies in communication between patients and health professionals, poor care coordination and inadequate care of patients with chronic disease in Australia (Schoen et al. 2005).

Our report reveals large disparities in the supply of cardiovascular medicines to newly prescribed patients—people living in metropolitan areas were dispensed these medicines at twice the rate of those in rural areas, and 29–58 times the rate of people in remote areas. Given that deaths from cardiovascular disease are higher in rural and remote areas of Australia compared with major cities, these inequalities are of particular concern (AIHW 2004a, AIHW 2006a). The BEACH study has shown no differences in the rates at which GPs manage circulatory problems or prescribe cardiovascular medicines in rural and remote areas compared with metropolitan areas (AIHW: Knox et al. 2005). However, the availability of doctors per head of population decreases with increasing geographic remoteness (AIHW 2004b), as does the average number of GP visits per year per head of population (AIHW: Knox et al. 2005), limiting access to doctors for people in rural and remote areas and opportunities to manage health conditions and prescribe medicines. It is therefore likely that the disparities in supply of medicines are due to problems accessing medical services and medicines in rural and remote areas. We do not know if, and to what extent, people in rural and remote areas access medicines from other sources such as state and territory government programs.

Safety is a concern too. Medicines that may be used to prevent or treat cardiovascular disease were associated with 301 deaths in 2004 and in 29 of these cases they were the main cause of death. Adverse effects of these medicines were recorded in almost 28,500 hospitalisations in 2004–05, with most of these occurring in patients aged 65 years and over. This figure is probably a gross underestimate as a large proportion of adverse events are not detected or recorded. Between 1991 and 2002, rates of drug-adverse events causing admission to hospital or extending hospital stay doubled for people aged 60 years and over. This is likely to be related to the observed use of multiple medicines (including complementary medicines) among older people, raising the potential for adverse medicine interactions, combined with the higher risk of adverse events in this group. There were also GP reports of patients with hypertension taking prescription or complementary medicines that could raise blood pressure. Home medicines reviews, with the potential to detect and prevent medicine related

problems, are underused. However, other national initiatives to reduce patient harm from medicines have achieved good results in participating centres.

The data presented in this report were drawn from the best national sources available, none of which is designed to elicit the sort of information we require to make a good assessment of whether medicines are used appropriately. The Pharmaceutical Benefits Data System allows us to build prescription histories for individual patients, but does not record the health condition for which a medicine was prescribed or the dose and medicine regimen prescribed. It also lacks coverage of patients dispensed unsubsidised prescriptions. The BEACH study gives us a valuable cross sectional snapshot of what happens in general practice, but does not provide information on how individual patients are managed over time. The National Health Survey asks participants about medicines taken for selected conditions only, and many people do not know which medicines they take for which condition, so the information on medicines in the survey is likely to be incomplete and unreliable. The National Hospital Morbidity Database contains information on episodes of care and drug-adverse events but does not record medicines used in hospital or patient identifiers so individual patients cannot be tracked through the system over time. Unique patient identifiers are needed to enhance patient transitions across parts of the health system and support quality use of medicines and patient safety.

The National Chronic Disease Strategy recognises that care for people with chronic disease, such as cardiovascular disease, generally involves multiple health care providers across multiple settings, including general practice, community health, hospitals, private providers and community and non-government organisations (National Health Priority Council 2006). It calls for integrated provision of disease prevention and care across services, settings, sectors and over time. The strategy states that multidisciplinary care must focus on the patient as a whole person, incorporate prevention, self-management and coexisting conditions, and be responsive to changing patient needs. The National Strategy for Quality Use of Medicines recognises the central role of health consumers and active partnerships in achieving quality use of medicines (DoHA 2002).

The approach taken for this report is narrow—focusing exclusively on cardiovascular disease. It does not reflect the reality of people living with multiple coexisting conditions. About 80% of Australians aged 65 years and over—the age group most affected by cardiovascular disease—have three or more chronic conditions (AIHW 2006a). Managing coexisting conditions affects the treatment choices health professionals make for their patients and the choices patients make for themselves. Our capacity to get some insight into this complexity is constrained by the data sources available. National administrative data sources in their current form do not make enough information available to allow linking of patient records. Such linkages between records of medical services delivered, medicines supplied, hospitalisations and deaths are needed to assess the quality of care given to patients at a national level and its impact on outcomes for them. Without linkages, we are restricted to using inadequate data sources that can at best provide only a broad picture, with no detail, from limited perspectives. Until individual electronic health records are adopted, or linking of health records nationally becomes possible, an integrated, multidimensional view of the whole person and their interaction with the whole health system, across all health care settings, throughout their life, will be lacking. At the state level, Western Australia and New South Wales have already established systems and protocols to link health records (Brook et al. 2005, Kelman et al. 2002, The Sax Institute 2007). Arrangements to do this at the national level have been proposed (Kelman et al. 2007).

This report has concentrated on some aspects of the quality use of medicines for cardiovascular health in Australia, but it has not looked into another side of the equation—the extent of excessive prescribing of medicines for those people at lower risk of cardiovascular disease. We hope to be able to tackle this issue in the near future.